ALEKSEYENKO, G.Ye., inzh.; TOLPYGO, O.B., kand.tekhn.nauk

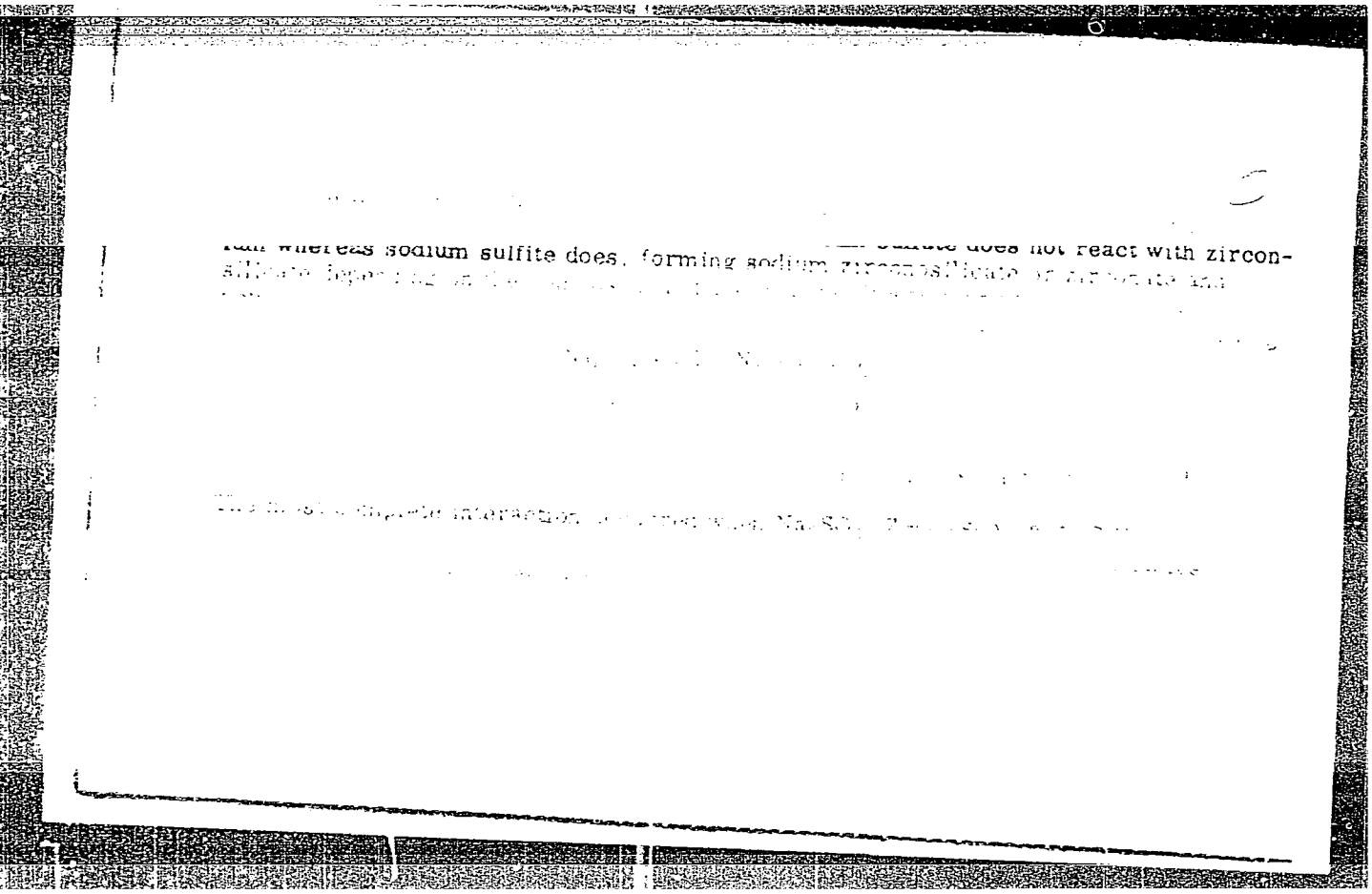
Some stationary processes in compensated electric power transmission lines with intermediate power takeoff. Izv. vys. ucheb. zav.; energ. 5 no.10:1-4 O '62. (MIRA 15:11)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskiy institut imeni S.M. Kirova. Predstavlena nauchnym seminarom kafedry teoreticheskikh osnov elektrotekhniki.
(Electric power distribution)
(Electric lines—Overhead)

ALEKSEYENKO, G.Ye.; TOLPYGO, O.B.

Steady-state conditions of compensated electric power transmission lines with intermediate power takeoff. Trudy Transp. energ. inst. Sib. otd. AN SSSR no.14:116-119 '62. (MIRA 16:9)
(Electric power distribution)

agent



whereas sodium sulfite does, forming sodium

does not react with zircon-

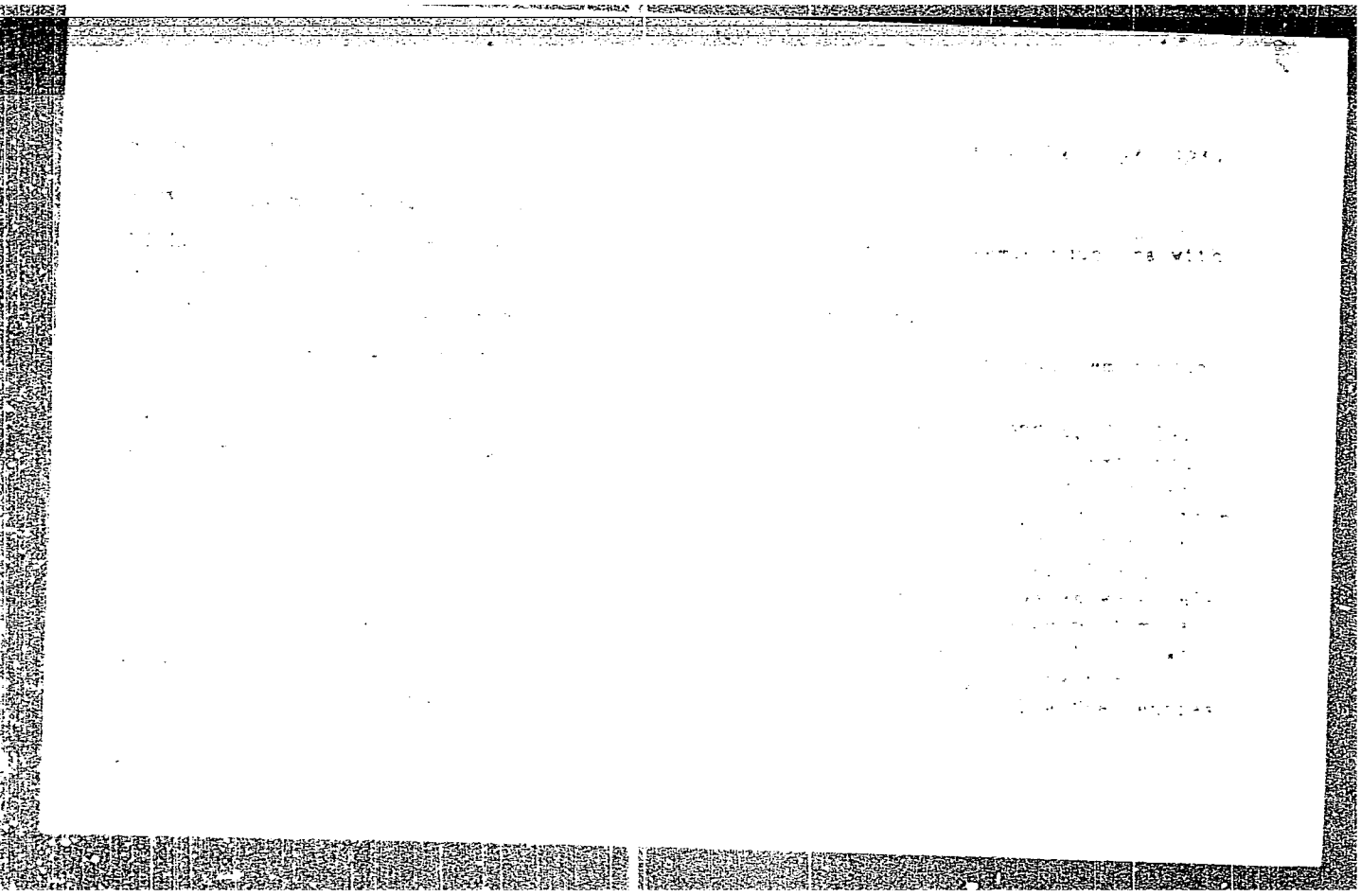
VAGONOVA, N.A.; TOLPYGO, Ye.A.; TIMOFEYEVA, L.I.; ZAKHAROV, V.I., red.; EL'KINA, E.M., tekhn. red.

[New developments in the operations and equipment of public eating facilities]Novoe v obshchestvennom pitanii. Moskva, Gostorgizdat, 1962. 241 p. (MIRA 16:4)
(Restaurants, lunchrooms, etc.--Equipment and supplies)
(Restaurant management)

TOLPYGO, Ye.I.; TOLPYGO, K.B.; SHEYNKMAN, M.K.

Auger recombinations with the participation of carriers bound to various centers. Fiz. tver. tela 7 no.6:1790-1794 Je '65. (MIRA 18:6)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.



APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120004-5"

DYKMAN, I.M.; TOLPYGO, Ye.I.

Microwave conductivity of semiconductors with current carriers heated by a constant field. Fiz. tver. tela 7 no.2:414-423 F '65. (MIRA 18:8)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

L 2296-66 EWT(1)/T/EWA(h) IJP(c) AT

ACCESSION NR: AP5014582 UR/0181/65/007/006/1790/1794

AUTHOR: Tolpygo, Ye. I.; Tolpygo, K. B.; Sheynkman, M. K.

TITLE: Auger recombination with participation of carriers bound to different centers

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1790-1794

TOPIC TAGS: electron recombination, impurity level, semiconductor carrier

ABSTRACT: This is a continuation of earlier work by one of the authors (Sheynkman, FTT v. 7, 28, 1965 and earlier), where the Auger recombination mechanism was proposed for multiply-and singly-charged centers, wherein the capture of a minority carrier is accompanied by the emission into the band of another carrier of opposite sign, localized on the same center. In the present article the authors present a quantum-mechanical calculation of the cross section for the capture of minority carriers by shallow singly-charged neutral particles, when the energy released is transferred to the majority carrier,

Card 1/3

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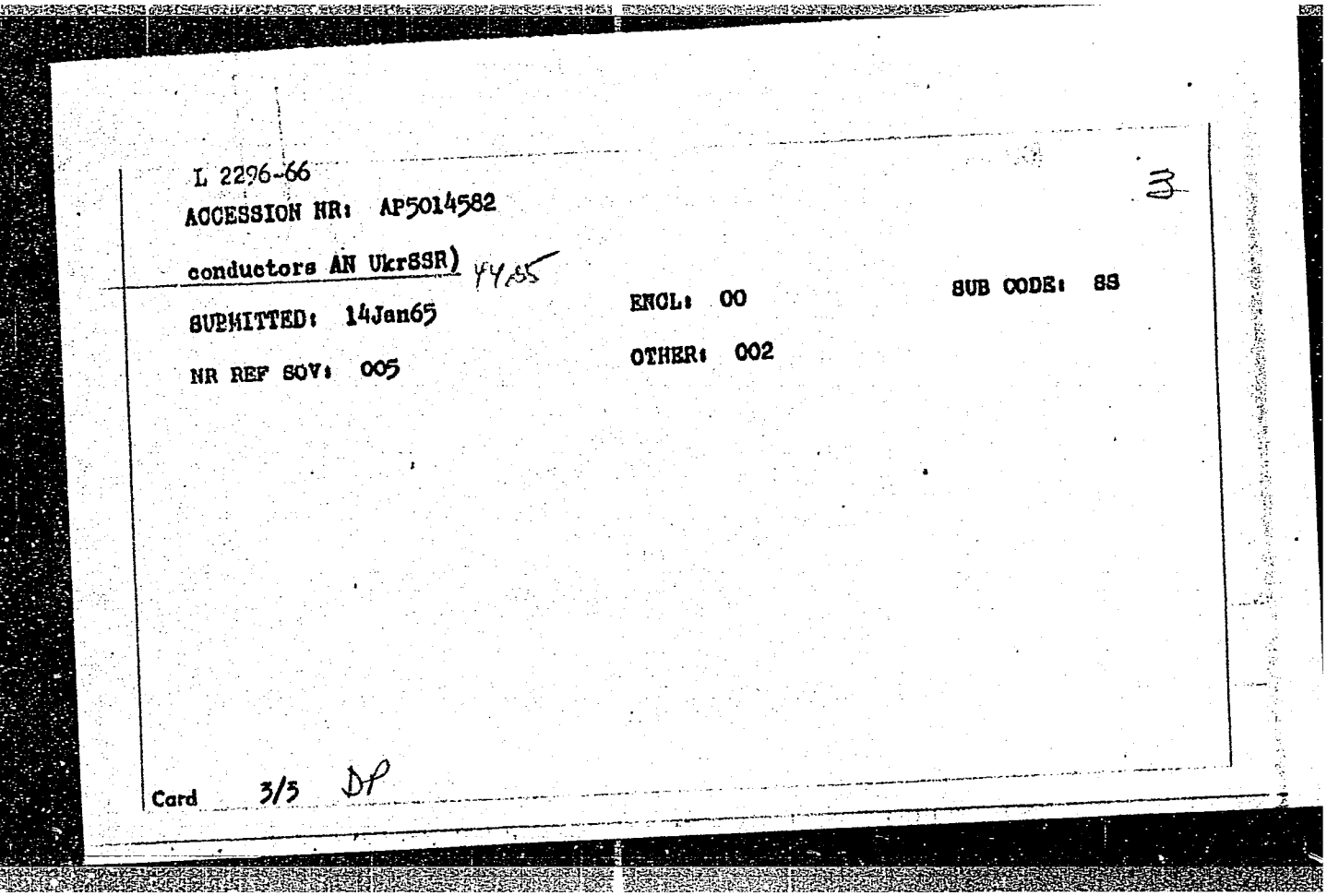
ACCESSION NR: AP5014582

12

which is localized on a neighboring center having the same ionization energy or larger. This carrier is emitted into the nearest band. The capture of carriers by deep centers is also discussed. Numerical estimates show that Auger recombination processes can become comparable with or even larger than radiative and other types of recombination at sufficiently low temperatures and at high impurity concentrations. Values on the order of 10^{-21} — 10^{-22} are obtained for semiconductors of the Ge, Si, or GaAs type in the case of shallow levels, and of the order of 10^{-19} — 10^{-20} for capture by deep levels. This indicates that a capture of a carrier by a shallow center of large radius, with transfer of the energy to a carrier of opposite sign localized on a neighboring deep center, would be most effective. The authors thank E. I. Rashba for valuable critical remarks, and V. Ye. Lashkarev, S. G. Kalashnikov, and V. L. Bonch-Bruyevich for interest in the work and a discussion. Orig. art. has: 1 figures and 5 formulas.

ASSOCIATION: Institut poluprovodnikov AN UkrSSR, Kiev (Institute of Semi-

Card 2/3



L 2296-66

ACCESSION NR: AP5014582

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conductors AN UkrSSR) 44.55

SUBMITTED: 14Jan65 ENCL: 00 SUB CODE: SS

NR REF SOV: 005 OTHER: 002

Card 3/3 DP

S/181/62/004/004/010/042
B108/B102

AUTHORS: Dykman, I. M., and Tolpygo, Ye. I.

TITLE: Magnetic resistance and Hall effect in semiconductors with hot electrons and in plasma

PERIODICAL: Fizika tverdogo tela, v. 4, no. 4, 1962, 896 - 908

TEXT: Using a method developed earlier (FTT, 2, 2228, 1960) the authors studied a semiconductor with sufficiently high electron concentration in constant electric and magnetic fields. The electron distribution function and the effect of the mutually perpendicular electric and magnetic fields are calculated from earlier results. Hall constant, mobility, and magnetic resistance are determined. At a sufficiently high electron concentration, electron-electron interaction has a considerable effect upon the relative conductivity in a magnetic field. Experiments (J. Esterman, A. Foner. Phys. Rev., 79, 365, 1950) confirm the authors' theoretical treatment. The electron temperature is also determined. A magnetic field lowers the electron temperature by a factor of $(1 + \frac{\Delta\sigma}{\sigma_0})$ (σ = conductivity),

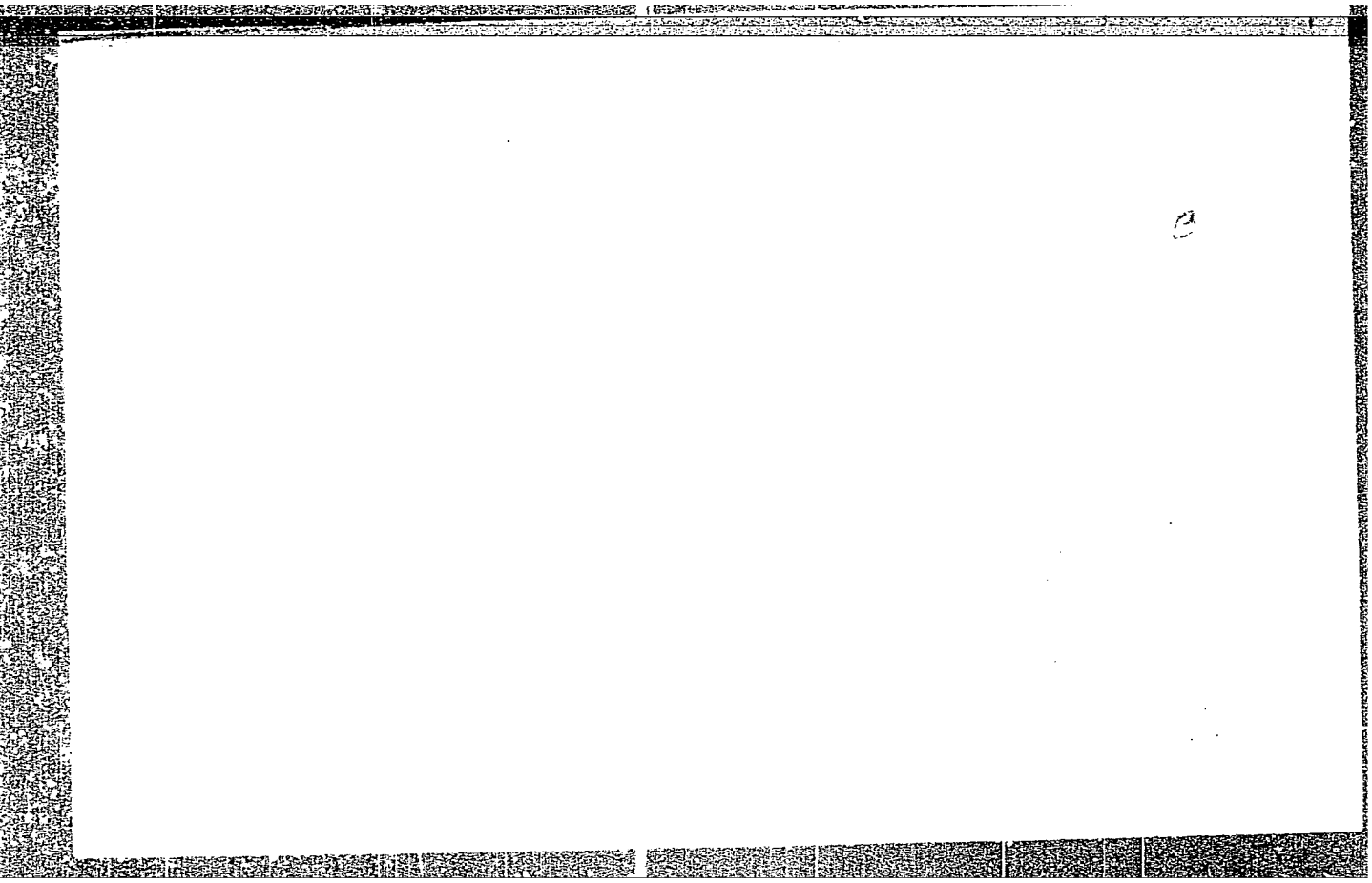
but this effect is very weak. The results obtained are also applicable to plasma. There are 5 figures and 17 references: 7 Soviet and 10 non-Soviet. The four most recent references to English-language publications read as follows: J. Uchiyama. Prog. Theor. Phys., 24, 455, 1960; S. Kaneko. J. Phys. Soc. Japan, 18, 1685, 1960; E. A. Desloge, S. W. Matthyse. Am. J. Phys., 28, 1, 1960; Ching-Sheng Wu. Proc. Roy. Soc., 259, 518, 1961 (no. 1299).

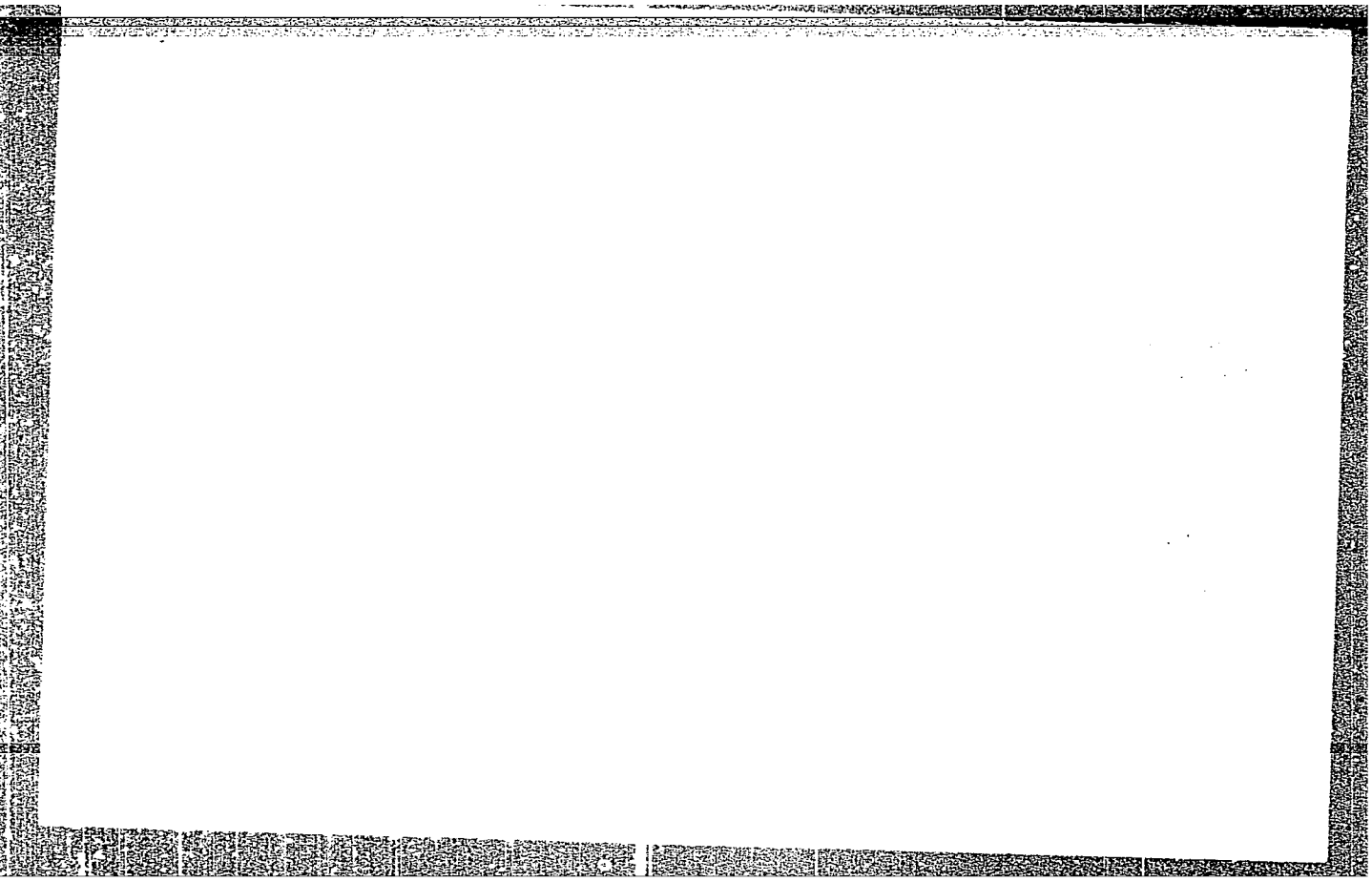
ASSOCIATION: Institut poluprovodnikov AN USSR, Kiyev (Institute of Semiconductors, AS UkrSSR, Kiyev)

SUBMITTED: November 21, 1961

TOLPYGO, V.K.; LAYNER, A.I.

Interaction of zirconium with sodium sulfate in the presence of a reducing agent. TSvet. met. 37 no.12 D '64
(MIRA 18:2)





APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120004-5"

TOLSHCHIN, A. I.; TAPIN, S. A.

Grinding and polishing

Surface polishing machine for ceramic products, Ogneupory 17 No. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1952 1953, Uncl.

TOLSKII, G.

V. KRESTINSKII, ZhPKh 3, 691-8, 1930

1. TOLSHCIN, A. I., PAPIN, S. A.

2. USSR (600)

4.

7. Ploskoshlifoval'nyy Stanok Dlya Keramicheskikh Izdeliy. Ogneupory 17 no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED

TOLSHCHIN, A.I.; PAPIN, S.A.

Operating a conveyer "vacuum press". Ogneupory 18 no.3:137-141 '53.
(Power presses) (Vacuum apparatus)

TOLSHCHIN, A.I., PAPIN, S.A.

Milling Machinery

Clay crushing rollers operating without breakdown. Ogneupory 17, no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, OCTOBER 1952 [redacted], Uncl.

TOLSHCHIN, A.I. ; PAPIN, S.A.

Pottery

Surface polishing for ceramic products. Ogneupory 17, No. 4, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952, Unclassified.

TOLSHCHIN, A.I., PAPIN, S.A.

Grinding and Polishing

Sruface polishing machine for ceramic products. Ogneupory 17, no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, AUGUST 1952 ~~1953~~ Uncl.

TOLSCHIN, A.I., PAPIN, S.A.

Milling Machine y

Clay crushing rollers operating without breakdown. Ogneupory 17 no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952, Uncl.

L 46184-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)

ACC NR: AP6023320 (N) SOURCE CODE: UR/0114/66/000/004/0022/0025

AUTHOR: Tolshin, V. I. (Candidate of technical sciences)

ORG: none

TITLE: Calculation of transient processes in diesel engines with two stage injection on analog computers

SOURCE: Energomashinostroyeniye, no. 4, 1966, 22-25

TOPIC TAGS: diesel engine, axial compressor, computer application, transient process

ABSTRACT: The aim of the work was an analytical solution leading to determination of the change in the indices of transient processes in diesel engines with free turbo-compressors, with a variation of various parameters of the speed regulation system, such as the moment of inertia of the diesel, the moment of inertia of the turbo-compressor, the exitation system of the generator, etc. For purposes of calculation, transient processes can be divided into the following three periods: 1) from the moment when the load is thrown on to the moment when the gear comes to rest; experiments show that the change in the rpm of the turbo-compressor during this short period of time can be neglected;

Card 1/2 UDC: 681.142:621.436.001.24

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ACC NR: AP6023320

2) from the moment when the gear comes to rest to the moment when a new rpm is achieved by the diesel; during this period, the regulator is inoperative; 3) from the moment when a new rpm is achieved by the diesel to the moment when the transient process is finished (damping out of the fluctuations of the rpm of the diesel). The article derives the appropriate equations for solution of the problem on the most widely used small analog computers (Types MN-7, IPT-5, LMU-1, and others). It gives a block diagram for solution of the system of differential equations on a Type LMU-1 computer. Orig. art. has: 6 figures and 1 table.

SUB CODE: 21,13 / SUBM DATE: none/ ORIG REF: 002

Card 2/2 fv

VOROSHILOVA, M.K.; BALAYAN, M.S.; TOLSKAYA, E.A.; YUROVETSKAYA, A.L.

Relationships between neurovirulence and antigenic and other properties of type 2 poliovirus strains. Acta virol. 7 no.3:286 My '63.

1. Institute of Poliomyelitis and Viral Encephalitides, U.S.S.R. Academy of Medical Sciences, Moscow.
(POLIOVIRUS) (ANTIGENS) (NERVOUS SYSTEM)

GOL'DSHTEYN, M.N., prof.; ZHEREBTSOV, I.V.; TOL'SKAYA, S.Ye.; FRISHMAN, M.A.; LEVANKOV, I.S.; ROZENBERG, A.M.; BELASHOV, D.A.; TSERKOVNITSKAYA, A.I.; LAPIDUS, L.S.; YAKOVLEV, B.V.; GUBENKO, Ye.N.; VICHEREVIN, A.Ye., red.

[Preventing the deformation of tracks and structures overlaying mine workings.] Preduprezhdenie deformatsii puti i sooruzhenii nad shakhtnymi podrabotkami. Moskva. Transport, 1964. 65p. (Voprosy geotekhniki, no.8) (MIRA 18:2)

SIMONENKO, L.L.; ROZENBERG, A.M.; RYASNYANSKIY, B.A.; SOKOV, N.A.; TOL'SKAYA, S.Ye.; TROYANSKIY, A.M.; TSUKANOV, P.P., kandidat tekhnicheskikh nauk, redaktor; VERINA, G.P., tekhnicheskiy redaktor

[The Donets railway's advanced method of track maintenance] Peredovye metody truda putеitsev Donetskoi dorogi. Moskva, Gos. transp.zhel-dor.izd-vo, 1956. 110 p. (MLRA 9:8)
(Railroads--Track)

TOL'SKAYA, S.Ye.

Experience reconstructing a pedestrian bridge. Put' i put. khoz. no.1:31 Ja '58. (MIRA 11:1)

1. Nachal'nik otdela inzhenernykh sooruzheniy g. Stalino.
(Kramatorsk--Railroad bridges)

TOL'SKAYA, T.S.

Injectivity and freedom. Sib. mat. zhur. 6 no.5:1202-1207 S-O '65. (MIRA 18:10)

TOL'SKAYA, V.A.

Conference of heads of stations for visual observation of artificial earth satellites. Biul.sta.opt.nabl.isk.sput.Zem. no.7: 1-2 '59. (MIRA 13:5)

1. Astronomicheskiy sovet AN SSSR.
(Artificial satellites--Tracking)

3,1560

S/035/61/000/004/030/058
A001/A101

AUTHOR: Tol'skaya, V.A.

TITLE: Determination of infrared magnitudes of stars in the nebula Orion

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 4, 1961, 40, abstract 4A373 ("Soobshch. Gos. astron. in-ta im. P.K. Shternberga", 1959, no. 106, 34 - 46)

TEXT: Infrared magnitudes of stars were determined from a photograph taken on a film sensitive to red rays through an infrared filter by the 50-cm telescope of Maksutov system at Alma-Ata. The center of the region investigated has the coordinates: $\alpha = 5^h30^m$, $\delta = -5^\circ27'$, region area has 9 square degrees. The effective wavelength of the photometric system in which stellar magnitudes were obtained is located between the ranges of red and infrared stellar magnitudes, the extreme stellar magnitude being $\sim 12^m$. A photometric standard of stellar magnitudes for this spectral region does not exist, therefore photometering was performed on a Fesenkov comparator by the conventional method with the photographic scale. It was assumed that infrared magnitudes of stars with zero conventional

Card 1/2

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color indices are equal to photographic ones. Infrared magnitudes of the rest of stars were determined from a graph which relates photographic stellar magnitudes of the stars investigated and estimates of their infrared magnitudes obtained. A catalogue is presented containing estimates of infrared magnitudes for about 250 stars; stars of the Orion cluster are noted.

T. Kirillova

[Abstracter's note: Complete translation]

MELIN, Marshall; TOL'SKAYA, V.A. [translator]

Explorer VII (1959 1). Biul.sta.opt.nabl.isk.sput Zem. no.4:16-17 '60. (MIRA 13:11)
(Artificial satellites)

GINDIN, Ye.Z.; LEYKIN, G.A.; LOZINSKIY, A.M.; LUR'YE, M.A.; MASEVICH, A.G.; SEVERNAYA, O.A.; SENTSOVA, Yu.Ye.; SLOVOKHOTOVA, N.P.; TOL'SKAYA, V.A.; TSITOVICH, V.V.

Brief report of the Astronomical Council of the Academy of Sciences of the U.S.S.R. on visual and photographic observations of artifical earth satellites in 1957-1959. Biul. sta. opt. nabl. isk. sput. Zem. no. 6:1-33 '60. (MIRA 14:2)
(Artificial satellites--Tracking)

TOL'SKAYA, V.A.

PHASE I BOOK EXPLOITATION SOV/5577

Akademiya nauk SSSR. Astronomicheskiy sovet.

Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli. no. 10. (Bulletin of the Stations for Optical Observation of Artificial Earth Satellites. No. 10) Moscow 1959. 30 p. 500 copies printed.

Sponsoring Agency: Astronomicheskiy sovet Akademii nauk SSSR.

Resp. Ed.: Ye. Z. Gindin; Ed.: D. Ye. Schegolev; Secretary: O. L. Severnaya.

PURPOSE : This bulletin is intended for scientists and engineers concerned with optical tracking of artifical satellites.

COVERAGE: The bulletin contains eight articles, three of which are concerned with the orientation of a satellite's axis of rotation from the variation of its apparent brightness; another article analyzes the apparent brightness of Sputnik III and

Card 1/4

its variation and presents an interpretation of the experimental results. Other articles deal with the estimation of the distance to a satellite, photographic observations, the influence of tidal forces on inflatable satellites, and the results of photographic observation of satellites. An appendix lists 86 Soviet satellite observation stations. No personalities are mentioned. There are 8 references: 6 Soviet and 2 English.

TABLE OF CONTENTS:

Bulletin of the Stations (Cont.) SOV/5577

II. Observations of artificial satellites by stations abroad

AVAILABLE: Library of Congress

Card 4/4

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TOLSKAYA, V.A.
29(5)

PHASE I BOOK EXPLOITATION SOV/3312

Akademiya nauk SSSR. Astronomicheskiy sovet.

Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov zemli, no. 7 (Bulletin of Stations for Optical Observation of Artificial Earth Satellites, nr. 7) Moscow, 1959. 29 p. 500 copies printed.

Resp. Ed.: Ye.Z. Gindin; Editorial Secretary: O.A. Severnaya

PURPOSE: The book is intended for scientists engaged in earth-satellite research and for students of astronomy.

COVERAGE: The collection of articles summarizes the results of observations of the Soviet earth satellites. The treatment includes: methods of observation, moments of maximum visibility, devices and cameras used, tables with data. There are numerous figures and some Soviet references. Each article in this collection is accompanied by an English annotation.

TABLE OF CONTENTS:

Card 1/7

The article reports on the conference of heads of stations for observation of artificial earth satellites, which took place in Moscow, 15-17 April, 1959. The introductory speech was made by A.G. Masevich, acting chairman of the Council on Astronomy, Academy of Sciences, USSR, who summarized achievements in methods of observation, described the practice of exchanging data among individual stations and reported on the publishing of such data in special bulletins. A paper on the "Characteristics of Satellite Orbits" was read by A.A. Mashkov, stressing the importance of the obliquity of the ecliptic in determining the velocities of interplanetary flights. A report on the "Application of Results Obtained From Optical Observations of Artificial Earth Satellites" was read by Yu.V. Batrakov of the ITA (Institute of Theoretical Astronomy [Leningrad]). Batrakov reported on programming of data in electronic computers, on the construction of graphs showing changes of certain physical elements (e.g., atmospheric resistance) with time and the irregularity of such changes, and on photographic observations. The present practice of processing photographic data as well as photometric methods of observations were the subject of the paper by Professor V.P. Tsesevich of Odessa. A new instrument for determining the brightness of artificial earth satellites was described by V.V. Shmeling of Riga. A.A. Kiselev of the GAO [Main Astronomical Observatory, Leningrad-Pulkovo] introduced a method for determining the direction of the

axis of rotation of sputniks. A number of improvements in observation methods were suggested by A.Ya. Virin of Smolensk, S.A. Leshakov of Petrozavodsk, and A.G. Sukhanov of Vladivostok. Coordinate systems and measuring equipment were discussed by V.N. Ivanov of Krasnodar, V.V. Shmeling of Riga, Ya.E. Eynasto of Tartu, A.K. Osipov of Kiyev, V.I. Kuryshev of Ryazan', V.A. Sorokin of Khabarovsk, G.D. Kvirkveliya of Tbilisi, and A.M. Issayev of Baku. Methods of tabulation and computation of the ephemeris were discussed by V.Ye. Solov'yëv of Dnepropetrovsk and I.A. Klimishin of L'vov. Differences in methods and equipment for photographing artificial earth satellites at observation stations, and data on cameras used at Omsk, Orenburg (Chkalov), L'vov, Vologda, Yuzhno-Sakhalinsk, and Kzyl-Orda, are discussed. Two names are mentioned: K.N. Kan of Yuzhno-Sakhalinsk and S.Kh. Khusainov, chief of the observation station at Kzyl-Orda. The organizational aspect of observations was discussed by Ye.Z. Gindin, scientific secretary to the Astronomic Council, Academy of Sciences, USSR, who stressed the importance of data obtained from sputnik observation stations in the study of astronomy at schools of higher technical education.

Tsesevich, V.P. Brightness Variations of Rocket Carriers 3

The author discusses the variation in brightness and their dependence on the changes in the axis-direction of sputniks. Data collected from 33 observation points (localities are given) were processed at the Astronomical Observa-

tory of Odessa. The present article discusses the methods applied to the processing of the above data and presents two theories: one on the specular and another on the diffuse reflection of light. Both theories are applicable to solving the problem of brightness variations.

Tsesevich, V.P. Rotation Period of the Rocket Carrier of the Third Soviet Sputnik 8
A linear expression for rotation periods based on data from 5 observation stations is derived, applicable to the moments of maximum brightness of sputnik III. Variations were registered throughout the month of August, 1958. The derived expression is subject to discussion. The study was conducted at the Astronomical Observatory of Odessa.

Grigorevskiy, V.M. Photometric Methods of Studying Artificial Earth Satellites 14
The study was conducted at the Astronomical Observatory of Odessa. Several methods are discussed and evaluated, but no positive conclusions drawn. The methods discussed were used in observations of both the second and third Soviet satellites. Data collected by V.P. Tsesevich of Odessa and B.M. Gimmel'farb of Arkhangel'sk are analyzed. A method based on the study by V.P. Tsesevich for photometric observation of satellites with considerable brightness variations is presented. There are 6 Soviet references.

Bulletin of Stations (Cont.)

SOV/3312

News

The Satellite Observation Station at the Turkmen State Pedagogical Institute imeni Lenin started a new Bulletin. The first issue, published in 1000 copies, contains articles on sputnik observation, as well as reports from the Meteoric Observatory at Chardzhou. 29

Appendixes

Tables indicating the localities of stations and the number of satellite observations, both in the USSR and in other countries.

AVAILABLE: Library of Congress.

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TOL'SKAYA, V.A.

Effect of tidal forces on the strength of the covering of inflatable satellites. Biul.sta.opt.nabl.isk.sput.Zem. no.10: 16-17 '59. (MIRA 13:3)

1. Astronomicheskiy sovet AN SSSR.
(Artificial satellites)

TOL'SKAYA, V.A.

Determining infrared magnitudes of stars in the Orion nebula.
Soob.GAISH no.106:34-46 '59. (MIRA 13:10)
(Stars--Magnitude)

TOL'SKAYA, V.A.

Determining infrared magnitudes of stars in the vicinity of δ Cygni. Soob.GAISH no.106:47-51 '59. (MIRA 13:10)
(Stars—Magnitude)

VOROSHILOVA, M.K.; TOL'SKAYA, Ye.A.; LAVROVA, I.K.; KOROLEVA, G.A.

Risk of malignant degeneration of continuously growing cell cultures and their use for virological purposes. Vop.virus. 5 no.3:360-367 My-Je '60. (MIRA 13:9)

1. Laboratoriya immunologii Instituta po izucheniyu poliomiyelita AMN SSSR, Moskva.
(VIRUSES) (NEOPLASMS)

AGOL, V.I.; KOL'SKAYA, Ye.A.; VOROSHILOVA, M.K.

Pleiotropia of guanidine mutations of the poliomyelitis virus. Dokl. AN SSSR 164 no.2:433-436 S '65. (MIRA 18:9)

1. Institut poliomiyelita i virusnykh entsefalitov AMN SSSR i Moskovskiy gosudarstvennyy universitet. Submitted November 19, 1964.

CHUMAKOV, M.P.; VOROSHILOVA, M.K.; DROZDOV, S.G.; DZAGUROV, S.G.; LASHKEVICH, V.A.; MIRONOVA, L.L.; RAL'F, N.M.; GAGARINA, A.V.; DOBROVA, I.N.; ASHMARINA, Ye.Ye.; SHIRMAN, G.A.; FLEYER, G.P.; TOL'SKAYA, Ye.A.; SOKOLOVA, I.S.; EL'BERT, L.B. (Moskva); SINYAK, K.M. (L'vov)

Some results of the work in mass immunization of the population of the Soviet Union against poliomyelitis with live vaccine from Sabin strains. Vest. AMN SSSR 16 no.4:30-43 '61. (MIRA 15:5)

1. Iz Instituta poliomyelita i virusnykh entsefalitov AMN SSSR.
(POLIOMYELITIS VACCINE) (POLIOMYELITIS--PREVENTION)

AMS- A+B

Bibliography on dew

3D-84 551.508.74 551.574.41

"Tol'skii, A., Nabliudenila nad rosami v Borovom opytnom lesnichestve (Samar. gub.). [Observations on dew at the Borovoe experimental forest (Samara Province).] *Meteorologicheskii Vestnik*, 26(6):161-167, June 1916. 3 figs., 3 tables. DWB—A dark red colored iron plate 50 x 40 cm was used as dew receiver, the balance of Wild's evaporator and the usual meteorological self-recorder were parts of author's dromometer. Results of observations during 1913, 1914, and 1915 are presented. The tables contain: number of days with dew for each month, monthly mean and diurnal variations of dew intensity. In this period the maximum daily amount of dew was 0.24 mm at Borovoe. *Subject Headings:* 1. Diurnal dew variations 2. Annual dew variations 3. Drosometers 4. Borovoe, U.S.S.R.

GONCHARENKO, N.I., kand. tekhn. nauk; BABIY, A.S.; BAYDUK, V.F.; BAZILEVSKIY, A.R.; MISHCHENKO, N.M.; MALINOVSKIY, V.G.; NELEPA, V.I.; TOL'SKIY, A.A.; TRET'YAKOV, Ye.V., kand. tekhn. nauk; KHALIF, M.L.; PODOPRIGORA, I.D.

Smelting of steel in oxygen- and steam-blown converters with an acid lining. Met. i gornorud. prom. no.4:20-25 Jl-Ag '65. (MIRA 18:10)

SHUR, A.B.; SIVTSOV, G.V.; KUSHNEREVA, M.N.; BABIY, A.S.; TOL'SKIY, A.A.

New developments in research. Stal' 25 no.8:709-710 Ag '65.
(MIRA 18:8)

TOL'SKIY, A.A.; TUPILKO, V.M.; MASYUKOV, N.T.

Efficient rate of steel pouring. Metallurg 10 no.9:18 S '65.
(MIRA 18:9)

1. Yenakiyevskiy metallurgicheskiy zavod.

BABIY, A.S.; TOL'SKIY, A.A.; KHASIN, G.A.; DAVIDYUK, V.N.

New developments in research. Stal' 25 no.8:739 Ag '65.
(MIRA 18:8)

TOL'SKIY, A.A.; MASYUKOV, N.T.; GORDIYENKO, A.K.

Using grog-graphite tuyeres in the Hearth bottoms of bessemer converters. Ogneupory 28 no.9:394-396 '63. (MIRA 16:10)

1. Yenakiyevskiy metallurgicheskiy zavod.

BABIY, A.S.; TOL'SKIY, A.A.

New developments in research. Stal' 23 no.7:642 Jl '63.
(MIRA 16:9)

(Rolling (Metalwork))

BABIY, A.S.; TOL'SKIY, A.A.

New developments in research. Stal' 23 no.7:623 Jl '63.
(MIRA 16:9)
(Steel--Metallurgy)

KOCHO, V.S., doktor tekhn. nauk; MITROKHIN, A.K.; SHTOPKO, V.M.; SHOSTAK, V.A.; BELOKOPYTOV, V.A.; BAZILEVSKIY, A.R.; KOL'SKIY, A.A.

Temperature conditions of a converter bath with air and steam-oxygen bottom blowing. Met. i gornorud. prom. no.1:21-24 Ja-F '65. (MIRA 18:3)

ZUBAKIN, A.G.; LATYSHEV, G.V.; TOL'SKIY, V.Ye.

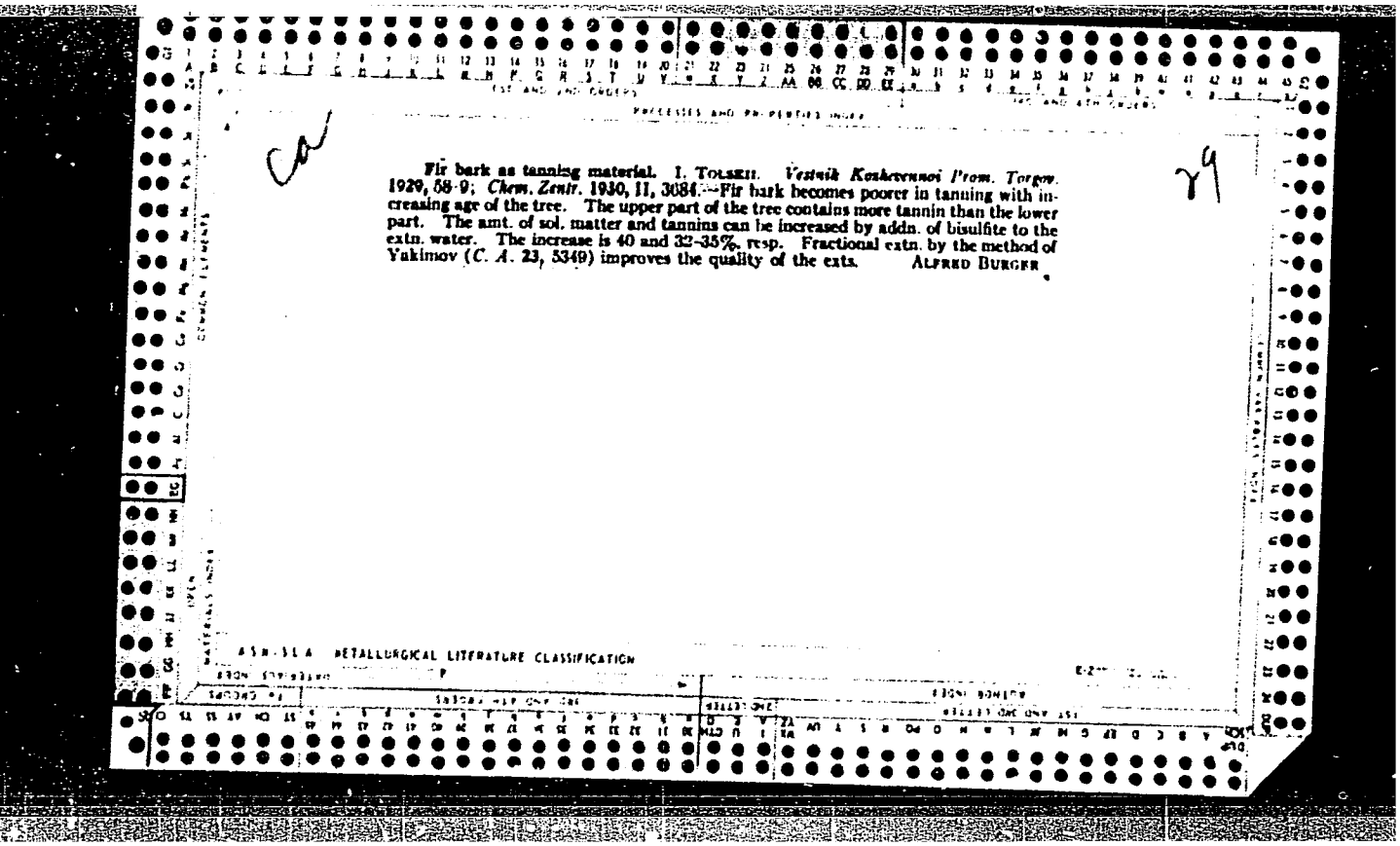
Seminar on the reduction of noise and vibration of motor vehicles. Avt.prom. 31 no.4:47-48 Ap '65. (MIRA 18:5)

1. TSentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

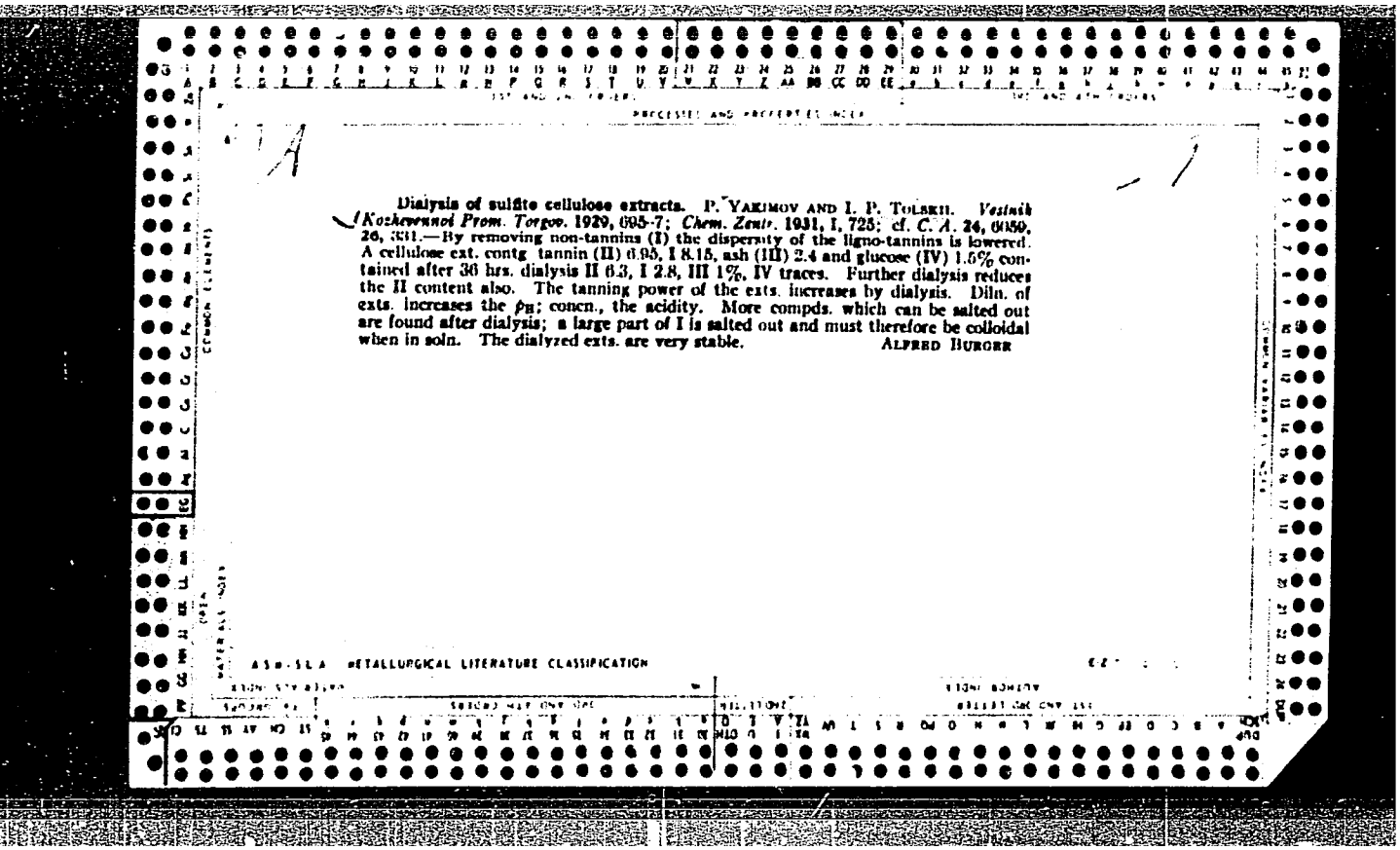
TOL'SKIY, V.Ye.

Basic requirements of an automobile-engine suspension. Avt.prom. 29 no.12:22-25 D '63. (MIRA 17:4)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.



Fir bark as tanning material. I. Tolskii. *Vestnik Kozhevennoi Prom. Torgov.* 1929, 58-9; *Chem. Zentr.* 1930, II, 3084.—Fir bark becomes poorer in tanning with increasing age of the tree. The upper part of the tree contains more tannin than the lower part. The amt. of sol. matter and tannins can be increased by addn. of bisulfite to the extn. water. The increase is 40 and 32-35%, resp. Fractional extn. by the method of Yakimov (*C. A.* 23, 5349) improves the quality of the exts. Alfred Burger



Dialysis of sulfite cellulose extracts. P. YAKIMOV AND I. P. TOLSKII. *Vestnik Kozhevennoi Prom. Torgov.* 1929, 695-7; *Chem. Zentr.* 1931, I, 725; cf. *C. A.* 24, 0350, 26, 831.—By removing non-tannins (I) the dispersity of the ligno-tannins is lowered. A cellulose ext. contg tannin (II) 6.95, I 8.15, ash (III) 2.4 and glucose (IV) 1.5% contained after 36 hrs. dialysis II 6.3, I 2.8, III 1%, IV traces. Further dialysis reduces the II content also. The tanning power of the exts. increases by dialysis. Diln. of exts. increases the p_H; concn., the acidity. More compds. which can be salted out are found after dialysis; a large part of I is salted out and must therefore be colloidal when in soln. The dialyzed exts. are very stable.

ALFRED BUROSE

CA

23

Detailed study of the operation of a paperboard cylinder machine. G. A. Tol'skif. *Bumash. Prom.* 25, No. 1, 15–19(1950).—The principles of cylinder mold operation are discussed, and various types of machines (direct flow, countercurrent flow, streamlined-vat and stirrer-equipped) are described. Expts. were carried out on a detn. of the percentage of mold surface taking part in sheet formation in direct and countercurrent pulp flow, the factors causing settling of the fibers in the vat, the most satisfactory arrangement of stirrers and overflow lines, and conditions of mixing. The

[illegible]d out at the Kalinen mill on a paperboard [illegible]ine with a mold 1840 mm. wide and 1250 mm. [illegible]th direct pulp flow and streamlined vat without [illegible]he furnish was steamed mech. wood pulp, 50–[illegible]., pulp consistency 1/300), normal basis wt. 45–50 g., [illegible]n., and machine speed 16 m./min. With const. pulp flow, machine operation was normal for 20–30 min., then the sheet wt. increased from 50 to 100–150 g./sq.m., the pulp thickened in the vat, and the machine had to be shut down. The results are explained in a plot of percentage of pulp deposited on the surface of the mold against the position of the fiber in the vat; the build-up of fiber in the vat is due to fiber which is formed on the mold and then torn off as the mold revolves in the vat. Countercurrent pulp flow in the same machine was also studied, with a furnish (32–40° S.-R.) of 40% groundwood, 25% kraft, and 35% unbleached sulfite, giving a sheet of good formation with a basis wt. of 450 g./sq.m., d. 0.55–0.60, 75 kg. breaking load, and 3% stretch. The operation of the mold in this work is given in detail. It was found impossible to obtain a sheet with a basis wt. greater than 175 g./sq.m. at a machine speed of 8.4 m./min. For the production of a bleached sulfite sheet (45–50° S.-R.) at a machine speed of 12 m./min., the max. basis wt. was 60 g./sq.m., and machine output was 12 kg./hr./sq.m. of mold surface. In general, pulp consistency varies with freeness, ranging from 0.15% for heavily beaten pulps to 0.4% for lightly beaten pulps. J. L. K.

TOL'SKIY, G.A., kand. tekhn. nauk; PESTRIKOV, V.M.; VIKTOROV, M.T.; GUBERNSKAYA, L.T., red.; SHENDAREVA, L.V., tekhn. red.

[Modern cylinder-screen machines for making cardboard] Sovremennye kruglosetochnye kartonodelochnye mashiny; obzor. Moskva, TSentr.in-t tekhn. informatsii i ekon. issl. po lesnoi, bumazhnoi i derevoobrabatyvaiushchei promyshl., 1962. 24 p. (MIRA 16:4)

1. Lesotekhnicheskaya akademiya imeni S.M.Kirova (for Tol'skiy). 2. TSentral'nyy institut tekhnicheskoy informatsii i ekonomicheskikh issledovaniy po lesnoy, bumazhnoy i derevoobrabatyvayushchey promyshlennosti (for Pestrikov, Viktorov).

(Papermaking machinery) (Paperboard)

TOL'SKIY, V.Ye.

Restricted vibrations of an engine and its suspension. Avt. prom. 29 no.4:11-13 Ap '63. (MIRA 16:6)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

(Motor vehicles—Engines)

TOL'SKIL, Andrei Petrovich, 1874-

Afforestation seed growing. Izd. 2. Moskva, Goslesbumizdat, 1950. 166 p.

DA

1. Trees - Russia. 2. Seed industry and trade. 3. Forests and forestry - Russia.

TOL'SKIY, A.A.; BAZILEVSKIY, A.R.; V rabote prinimali uchastiye: BUSHNEV, V.Ya.; BOVT, I.I.

Using kaolin wastes in making converter bottoms. Ogneupory 25 no.8: 357-359 '60. (MIRA 13:9)

1. Yenakiyevskiy metallurgicheskiy zavod. (for Tol'skiy, Basilevskiy). (Kaolin) (Metallurgical furnaces)

TOL'SKIY,G.A., kandidat tekhnicheskikh nauk

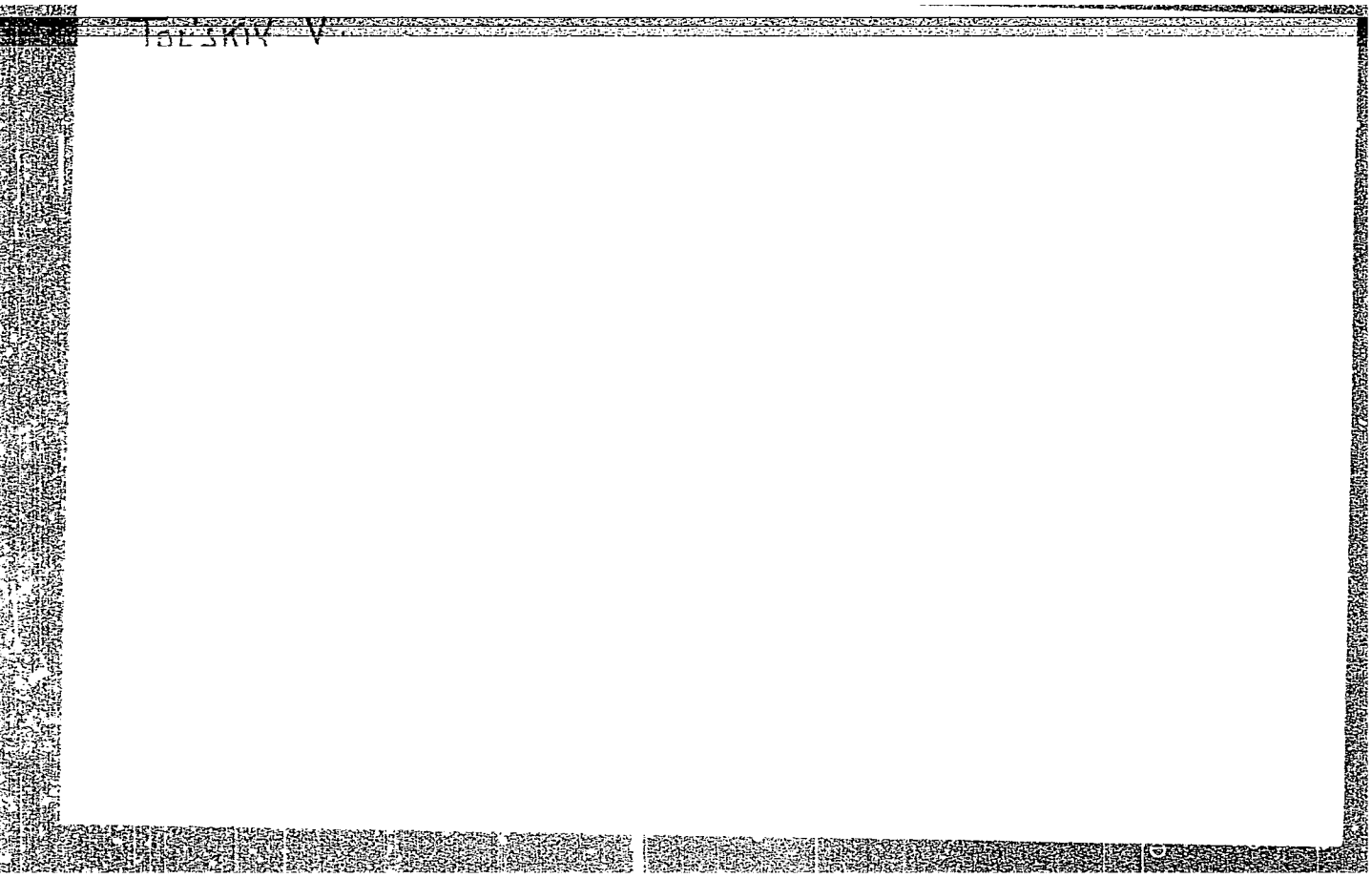
Forming the initial layer on a wire-cloth cylinder. Bum.prom. 30 no.5:10-13 My '55. (MLRA 8:8)

1. Glavnyy tekhnolog Gosudarstvennogo instituta proyektirovaniya tsellyulozno-bumazhnoy promyshlennosti.
(Paper industry)

TOLSKIY, G.A.

The influence of pulp consistency on the quality of cylinder-mold plies. G. A. Tol'skii. (2nd Pulp-Paper Combine, Kaliningrad.) *Bumazh. Prom.* 30, no. 10, 7-10(1955).—Sheet formation (I) (the uniformity of fiber distribution) was characterized subjectively for a sulfite pulp ply formed on a cylinder mold; I improved with decreasing pulp consistency (from 0.30 to 0.07%) and with increasing degree of beating (from 20 to 75° Schopper-Riegler, S. R.). At const. freeness (30° S. R.) I improved with increasing basis wt. (from 30 to 150 g./sq. m.). For kraft and groundwood I improved with decreasing pulp consistency. The effect of vat consistency on sheet d. was studied, under otherwise const. conditions (constant basis wt. of 60 g. per sq. m.), for sulfite beaten to 20, 30, 45, 60, and 75° S. R., sheet d. was 0.62, 0.67, 0.70, 0.74, and 0.77 for 0.07% consistency, 0.62, 0.62, 0.69, 0.72, and 0.75 for 0.10%, 0.59, 0.60, 0.67, 0.71, and 0.73 for 0.15%; 0.49, 0.60, 0.66, 0.68, and 0.70 for 0.20%; 0.48, 0.58, 0.62, 0.65, and 0.67 for 0.25%; and —, 0.58, 0.58, 0.61, and 0.63 for 0.30%. For kraft pulp at 30° S. R., sheet d. was 0.68, 0.65, 0.62, 0.58, 0.58, and —; and for groundwood 0.38, 0.35, 0.37, 0.35, 0.38, and 0.37 for 0.07, 0.10, 0.15, 0.20, 0.25, and 0.30% consistency. For the sulfite pulp at 30° S. R., the breaking length in m. was 4000, 3900, 3700, 2800, 2900, and 2200 for vat consistencies of 0.07, 0.10, 0.15, 0.20, 0.25, and 0.30%; at 45° S. R. corresponding values were 5700, 5000, 4500, 4300, 3100, and 3000; and at 60° S. R. were 3400, 5000, 4800, 4800, 4300, and 4200, resp. Similar trends were found for burst. Porosity in cc. of air flow per min. for the sulfite pulp at 30° S. R. was 220, 500, 530, 600, 710, and 840; for 45° S. R. corresponding values were 120, 140, 140, 150, 190, and 310; and for 60° S. R. were 50, 90, 95, 100, 105, and 110, resp. Data are also given on the energy consumption in sheet formation as a function of freeness and pulp consistency for sulfite, kraft, and groundwood.

John Lake Keays



ZUBAKIN, A.G.; TOL'SKIY, V.Ye.

Seminar on the reduction of motor-vehicle noise. Avt.prom. 29 no.3:45 Mr '63. (MIRA 16:3)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Motor vehicles—Noise)

SKINDER, I.B., kand.tekhn.nauk; TOL'SKIY, V.Ye.; SEMENOV, G.I.

Investigating and developing the design of the suspension for the IAMZ-236 engine. Avt.prom. 27 no.11:7-10 N '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut i Yaroslavskiy motornyy zavod.
(Motortrucks--Engines)

TOL'SKIY, V.Ye.; LATYSHEV, G.V.

Designing rubber shock absorbers for the suspension of an automobile engine. Avt. prom. 30 no.7:26-29 Jl '64. (MIRA 17:9)

1. TSentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

ZUBAKIN, A.G.; TOL'SKIY, V.Ye.

Noise in passenger cars. Avt. prom. no. 1:17-21 Ja '61.
(MIRA 14:4)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Automobiles—Noise)

TOLSORUBROV, M., krepil'shchik.

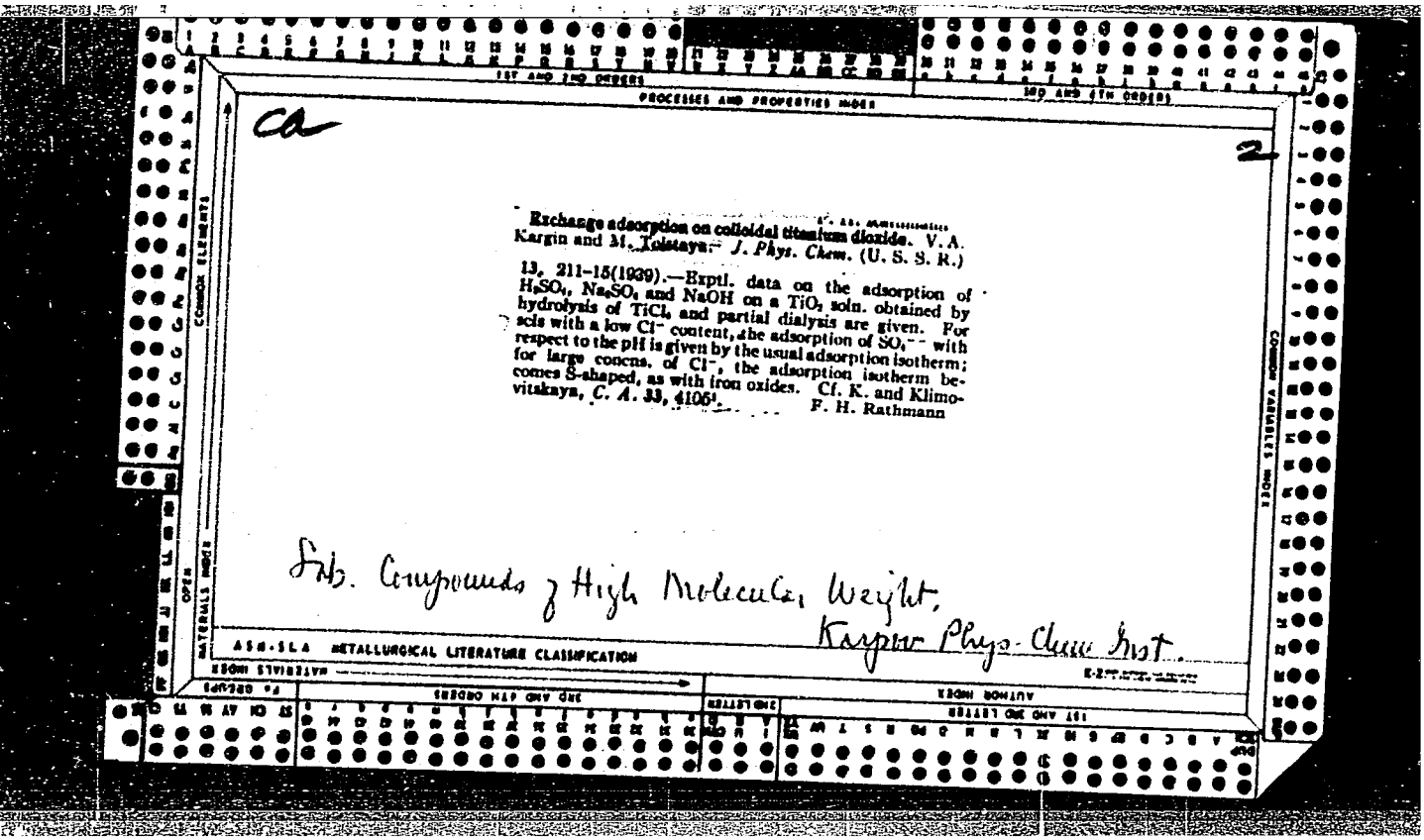
Great changes. Mast. ugl. 7 no.1:21 Ja '58. (MIRA 11:2)

1. Zamestitel' predsedatelya shakhtkoma shakhty "Nezhdannaya" kombinata Shakhtantratsit.
(Coal mines and mining)

TOLSTAYA, M.A.; POTEMINSKAYA, I.V.; IOFFE, E.I.

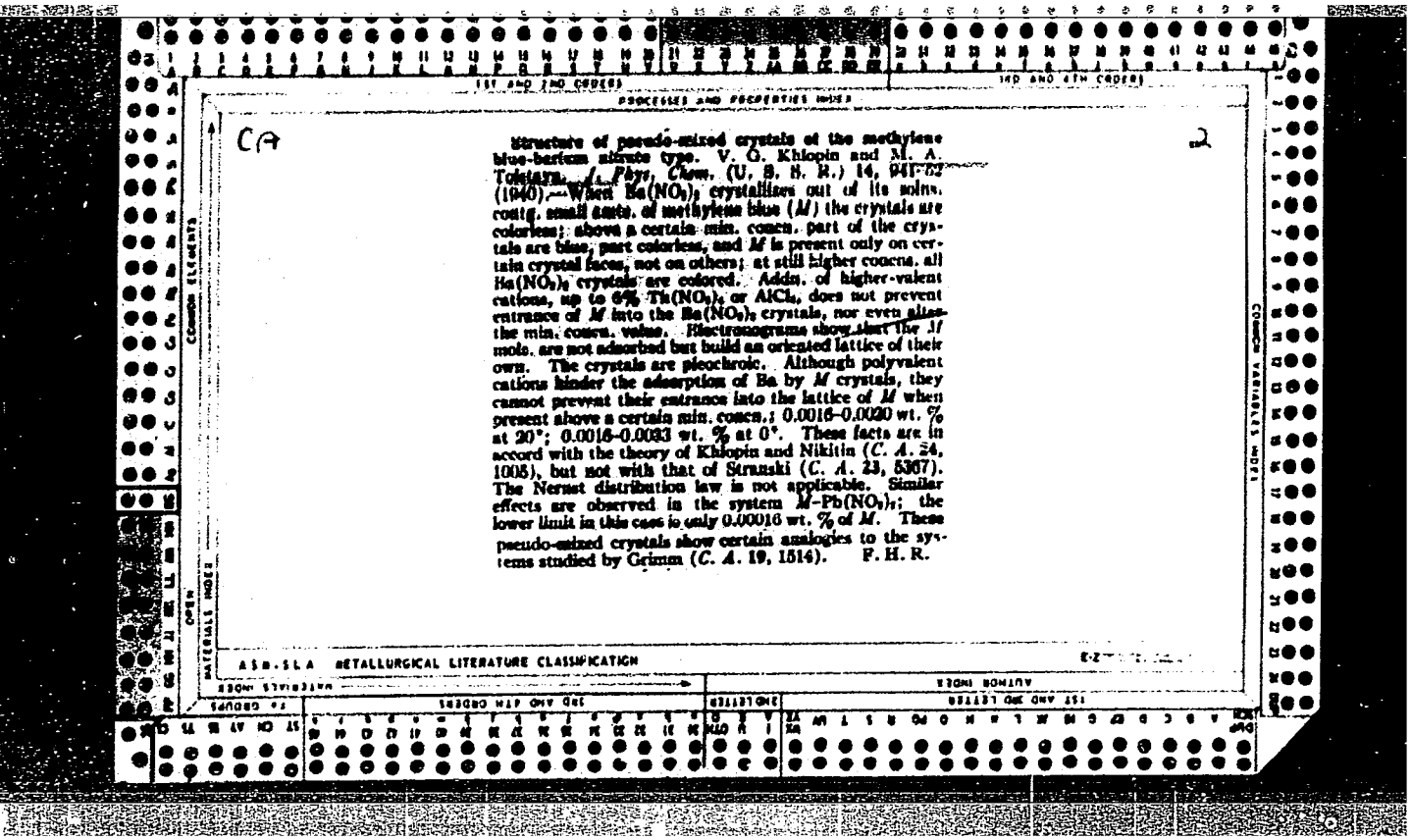
Electrolytic corrosion of cables with an aluminum sheathing under the effect of a commercial frequency alternating current. Zashch. met. 2 no.1:67-74 Ja-F '66. (MIRA 19:1)

1. Akademiya kommunal'nogo khozyaystva imeni K.D. Pamfilova, Leningrad. Submitted May 20, 1965.



Exchange adsorption on colloidal titanium dioxide. V. A. Kargin and M. Toistaya. *J. Phys. Chem.* (U. S. S. R.) 13, 211–15(1939).—Expt. data on the adsorption of H_2SO_4, Na_2SO_4 and NaOH on a TiO_2 soln. obtained by hydrolysis of $TiCl_4$ and partial dialysis are given. For sols with a low Cl^- content, the adsorption of SO_4^{--} with respect to the pH is given by the usual adsorption isotherm; for large concns. of Cl^-, the adsorption isotherm becomes S-shaped, as with iron oxides. Cf. K. and Klimovitskaya, *C. A.* 33, 4105[illegible]. F. H. Rathmann

Sb. Compounds of High Molecular Weight, Kargin Phys-Chem Inst.



CA

2

Structure of pseudo-mixed crystals of the methylene blue-barium nitrate type. V. G. Khlopin and M. A. Tolstaya. *J. Phys. Chem.* (U. S. S. R.) 14, 941-52 (1940).—When $Ba(NO_3)_2$ crystallizes out of its solns. contg. small amts. of methylene blue (*M*) the crystals are colorless; above a certain min. concn. part of the crystals are blue, part colorless, and *M* is present only on certain crystal faces, not on others; at still higher concns. all $Ba(NO_3)_2$ crystals are colored. Addn. of higher-valent cations, up to 6% $Th(NO_3)_4$ or $AlCl_3$, does not prevent entrance of *M* into the $Ba(NO_3)_2$ crystals, nor even alters the min. concn. value. Electronograms show that the *M* mols. are not adsorbed but build an oriented lattice of their own. The crystals are pleochroic. Although polyvalent cations hinder the adsorption of Ba by *M* crystals, they cannot prevent their entrance into the lattice of *M* when present above a certain min. concn.; 0.0016–0.0020 wt. % at 20°; 0.0016–0.0033 wt. % at 0°. These facts are in accord with the theory of Khlopin and Nikitin (*C. A.* 34, 1005), but not with that of Stranski (*C. A.* 23, 5367). The Nernst distribution law is not applicable. Similar effects are observed in the system *M*–$Pb(NO_3)_2$; the lower limit in this case is only 0.00016 wt. % of *M*. These pseudo-mixed crystals show certain analogies to the systems studied by Grimm (*C. A.* 19, 1514). F. H. R.

TOLSTAYA, M.A.; IOFFE, E.I.; POTEMINSKAYA, I.V.

Effect of the salt content, ion composition, the value of pH, and the degree of ground aeration on the corrosion of underground steel pipelines under the influence of a.c. Transp. i khran. nefti i nefteprod. no. 1:16-23 '64. (MIRA 17:5)

1. Akademiya kommunal'nogo khozyaystva im. K.D.Pamfilova.

KARGIN, V. A.; TOLSTAYA, M. A.

"Exchange Adsorption on Sols of Silver Iodide", Zhur. Fiz. Khim. 16, Nos. 3-4, 1942. Moscow, Physico-Chemical Institute imeni L. Ya Karpov, Laboratory of Colloidal Chemistry. Received 26 April 1941.

[redacted] Report U-1523, 24 Oct. 1951.

AUTHOR: Tolstaya, M.A., Candidate of Chemical Sciences, Kayris, E.I., Engineer and Fomin, V.M., Engineer. 96-7-15/25

TITLE: The thermal stability and corrosive activity of nitride-nitrate salt mixtures at temperatures above 500 °C. (Termicheskaya stoykost' i korrozionnaya aktivnost' nitrit-nitratnogo solevogo sostava pri temperaturakh vyshe 500 °C.)

PERIODICAL: "Teploenergetika" (Thermal Power) 1957, Vol.4, No.7, pp. 60 - 64 (U.S.S.R.)

ABSTRACT: The salt mixture known as HTS consisting of 40% $NaNO_2$ 53 KNO_3, 7% $NaNO_3$ is commonly used as a heat transfer medium at temperatures above 500 °C and also in hardening baths. Published data is available on the thermal stability and corrosivity of this mixture but it is necessary to study the kinetics of the process of thermal decomposition at temperatures above 500 °C in order to determine its practical importance. The object of the present work is to investigate the kinetics of the process of thermal decomposition of a nitrite-nitrate mixture and its corrosivity within the temperature range 500 - 550 °C, when in contact with pipes of steels used in engineering construction.

Card 1/5

The thermal stability and corrosive activity of nitride-nitrate salt mixtures at temperatures above 500 °C. (Cont.)

96-7-15/25

The experiments were carried out in a "rocking autoclave" made entirely of pipes of the steel under investigation. The pipes of the autoclave are provided with needle valves for taking samples of gas and liquid. The tubes are rocked in a vertical plane through an angle of 176° with a period of three seconds. Electrical heating wires on a layer of micanite are wound on the outside of the tube.

The degree of thermal decomposition of the salts was checked by determining the percentage concentration of individual ions in aqueous solution by analytical methods. The quantity of nitrogen separated served to check the balance.

The rate of corrosion of steel was determined by measuring the quantity of steel corrosion products in the salt. Iron was found in the form of oxides and hydrate, chromium as ions of CrO_4^{2-} and traces of nickel were found in some cases. At the end of the tests the tubes were opened up and the corrosion products on the inner surfaces were analysed.

Card 2/5

The thermal stability and corrosive activity of nitride-nitrate salt mixtures at temperatures above 500 °C. (Cont.) 96-7-15/25

The rate of corrosion was also calculated by determining the change in weight of the liquid remaining in the tube after removal of each sample, allowing for changes in the surface wetted by the liquid.

The steels tested were brands X18H8T, 15XM and 20. Data on the changes in composition of the substances in the liquid at temperatures of 450 - 550 °C in contact with pipes of these steels are given in Tables 1 and 2. From the results it may be concluded that in all the tests the quantity of nitrites in the salt mixture decreases and the quantity of nitrates increases. Metallic products of corrosion also appear in the salt. Isotherms showing the relationship between the rate of thermal decomposition of the nitrite-nitrate mixture, the temperature and the composition of the steel are shown in Figs. 3 and 4. Fig. 3 shows the relationship between the rate of thermal decomposition and temperature with one and the same metal and Fig. 4 the relationship between the rate of thermal decomposition and the composition of the steel. The isotherms show that

Card 3/5

The thermal stability and corrosive activity of nitride-nitrate salt mixtures at temperatures above 500 °C. (Cont.) 96-7-15/25

at 450 °C the rate of decomposition is negligible at 550 °C the rate is at first appreciable but soon drops, the rate depends on the type of steel in contact with the salt. Figs. 5 and 6 illustrate the rate of solution of corrosion products in the liquid for various steels and temperatures. The graphs show that the rate of corrosion of steel X18H8T in terms of chromium falls rapidly and after 100 hours it is so slow, even at 550 °C, that the metal would be considered stable. Corrosion of this steel is even less at lower temperatures. Data obtained from examination of the internal surfaces of the tube are given in Fig. 3. Table 4 gives data which best characterise the results of the tests, it gives the changes in the percentage composition of nitrites in the liquid during the test and after 100 hours, it gives the total weight of corrosion products and the rate of solution of corrosion products in the liquid after 100 hours testing. It may be concluded from the test results that at temperatures near

Card 4/5

The thermal stability and corrosive activity of nitride-nitrate salt mixtures at temperatures above 500 °C. (Cont.) 96-7-15/25

to 550 °C the rate of thermal decomposition of the nitrite-nitrate mixture depends very greatly on the nature of the metal in contact with the liquid. Steel 20 is most active in promoting thermal decomposition.

The corrosion stability of steels in contact with the nitrite-nitrate mixture depends on the temperature and composition of the steel. Steel X18H8T may be considered stable at 550 °C. Steel 15XM may also with reservations be considered stable. Steel 20 may be considered unstable at a temperature of 540 °C. The salt solution itself is stable in contact with steel X18H8T but not when in contact with the other two. It should be noted that steel 20 is also unstable at temperatures above 525 °C because of rapid corrosion from the flue gas side. There are 6 figures, 4 tables and 7 references, of which 5 are Slavic.

Card 5/5

ASSOCIATION: Moscow Power Institute (Moskovskiy Energeticheskiy Institut).

AVAILABLE:

05730

28 (5), 18 (7) SOV/32-25-10-19/63

AUTHORS: Tolstaya, M. A., Bogatyreva, S. V., Gradusov, G. N.

TITLE: Removal of Corrosion Products From Various Steels

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, pp 1205 - 1206 (USSR)

ABSTRACT: A valuation of the corrosion resistance of corrosion-resistant steels in tests in pure water at high temperatures is rather difficult since the corrosion rate is low. The method of cathodic removal of test samples in appropriate media is most favorable. To find a reliable method, a cathodic removal to a constant weight, and comparative experiments by ordinary removal in acids with delayers, were carried out in the present case. Plane and cylindric samples with surfaces of 10-20 cm and a weight of 8-15 g were tested in a special device (Figure). The loss in weight after the cathodic removal was 0.0010-0.0030 g for stainless steel, and 0.0050-0.0200 g for carbon steel. The corrosion products of the austenitic stainless steel represented a more or less dense velvetlike film of magnetite with admixtures of nickel- and chromium oxides, under which there was a second oxide film that could not be removed. The first-men-

Card 1/2

tioned oxide film could be detached by cathodic removal in 2.5% H_2SO_4 with urotropine (as a delayer), as well as 5% H_2SO_4 with 5-6 g/l of urotropine, at 65-70° and a current density of 0.1-0.2 a/cm^2 in 40-60 minutes. The corrosion products of the carbon steel represented a thick, black magnetite film with poor adhesion to the metal surface which was easily removed in the alkaline medium (8% NaOH). Thus, the corrosion of austenitic stainless, carbo[illegible] and poorly or medium-alloyed steels in water at high temperatures can be rated by the loss in weight of the sample after cathodic removal in different media. There are 1 figure and 1 Soviet reference.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Engineering Institute)

L 38171-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB/JH

ACC NR: AP6021077 (A) SOURCE CODE: UR/0365/66/002/002/0168/0175

AUTHOR: Tolstaya, M. A.; Ioffe, E. I.; Poteminskaya, I. V.

ORG: Academy of Public Economy im. K. D. Pamfilov (Akademiya kommunal'nogo khozyaystva)

TITLE: Electrocorrosion of underground aluminum materials in anodic and cathodic zones

SOURCE: Zashchita metallov, v. 2, no. 2, 1966, 168-175

TOPIC TAGS: corrosion rate, corrosion protection, aluminum alloy, polarization, cathode polarization, electrochemistry

ABSTRACT: A study of the electrocorrosion of aluminum cable sheathing under the action of anodic and cathodic currents is described. The rate of electrocorrosion was measured by weight loss after the surfaces were cleaned in a solution of CrO_3 (20 g/l) and 85% H_3PO_4 (35 ml/l) at 90-95°C for 10-20 min. Weight loss is given as a function of anodic current density (constant time--30 sec) and time (constant current densities of 0.02, 0.2, 0.75 and 5 ma/dm^2). The intensity of corrosion in the anodic regions is characterized by a coefficient of aggressiveness--K_a (defined as the ratio of actual corrosive wear to that calculated from Faraday's law) which ranged from 1.5 to 1.7. Polarization characteristics of Al and AMg-6 were obtained in sandy soils moist-

UDC: 620.193.92

Card 1/2

L 38171-66

ACC NR: AP6021077

ened with 10-12% solutions containing different amounts of Na_2SO_4, NaCl, $NaHCO_3$, $MgSO_4$ and $MgCl_2$. The intensity of local electrocorrosion was high and caused pitting as a result of erratic currents in both the anodic and cathodic zones. Under the action of the erratic currents in stable cathodic zones, the basic indicator of corrosion danger is the displacement of the electrode potential in the negative direction, surpassing the value of the maximum safe potential -1.4 v (relative to a copper sulfate electrode). Above -1.4 v, alkaline corrosion of Al takes place. The results attest to the difficulty of cathodic protection for underground aluminum materials. Orig. art. has: 5 figures.

SUB CODE: 11 / SUBM DATE: 20May65/ ORIG REF: 012/ OTH REF: 007

Card 2/2 mlp

L 39951-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB

ACC NR: AP6015288 (N) SOURCE CODE: UR/0365/66/002/003/0323/0330

AUTHOR: Tolstaya, M. A.

ORG: Academy of Municipal Services im. K. D. Pamfilov (Akademiya kommunal'nogo khozyaystva)

TITLE: Corrosive action of alternating current of industrial frequency (50 cps) on 1Kh18N9T steel in neutral solutions

SOURCE: Zashchita metallov, v. 2, no. 3, 1966, 323-330

TOPIC TAGS: corrosion rate, alternating current, sodium chloride, sulfate, steel / 1Kh18N9T steel

ABSTRACT: The corrosive action of a sine-wave alternating current of 50 cps on 1Kh18N9T steel was studied in ground water type solutions (solutions of sodium sulfate and chloride in concentrations from 0.01 to 0.1 N, primarily 0.1 N Na_2SO_4 + 0.05 N NaCl) at room temperature. The rate and nature of the corrosion were determined by gravimetric, photocolorimetric, and micrographic methods. It is shown that the polarization of 1Kh18N9T steel in these solutions by the alternating current is associated with an asymmetry of the peak values of the potential relative to the level of the steady-state potential; this asymmetry is characterized by the appearance of a constant anodic component of the potential. The value of the "mean" potential, measured by direct-current instruments, is an essential characteristic of the corrosion

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behavior of 1Kh18N9T steel during polarization with alternating current. The rate and nature of the electrode processes depend on the peak values of the electrode potential. An active and irreversible dissolution of the components of the steel develops in the anodic half-cycle when the critical peak value of the potential (associated with the critical current density) is reached. During polarization, iron and nickel issolve preferentially. Enrichment of the surface layer of the steel with chromium decreases the probability of the development of pitting if the density of the polarizing alternating current does not reach the critical value. The growth rate of pits on the steel surface under the influence of alternating current in sandy soils moistened with the solution 0.1 N Na_2SO_4 + 0.05 N NaCl is much higher than in the solution itself; this is attributed to the effect of differential aeration of the steel surface on the rate of development of pitting corrosion. Orig. art. has: 5 figures.

SUB CODE: 11,07/ SUBM DATE: 24Sep65/ ORIG REF: 008/ OTH REF: 005

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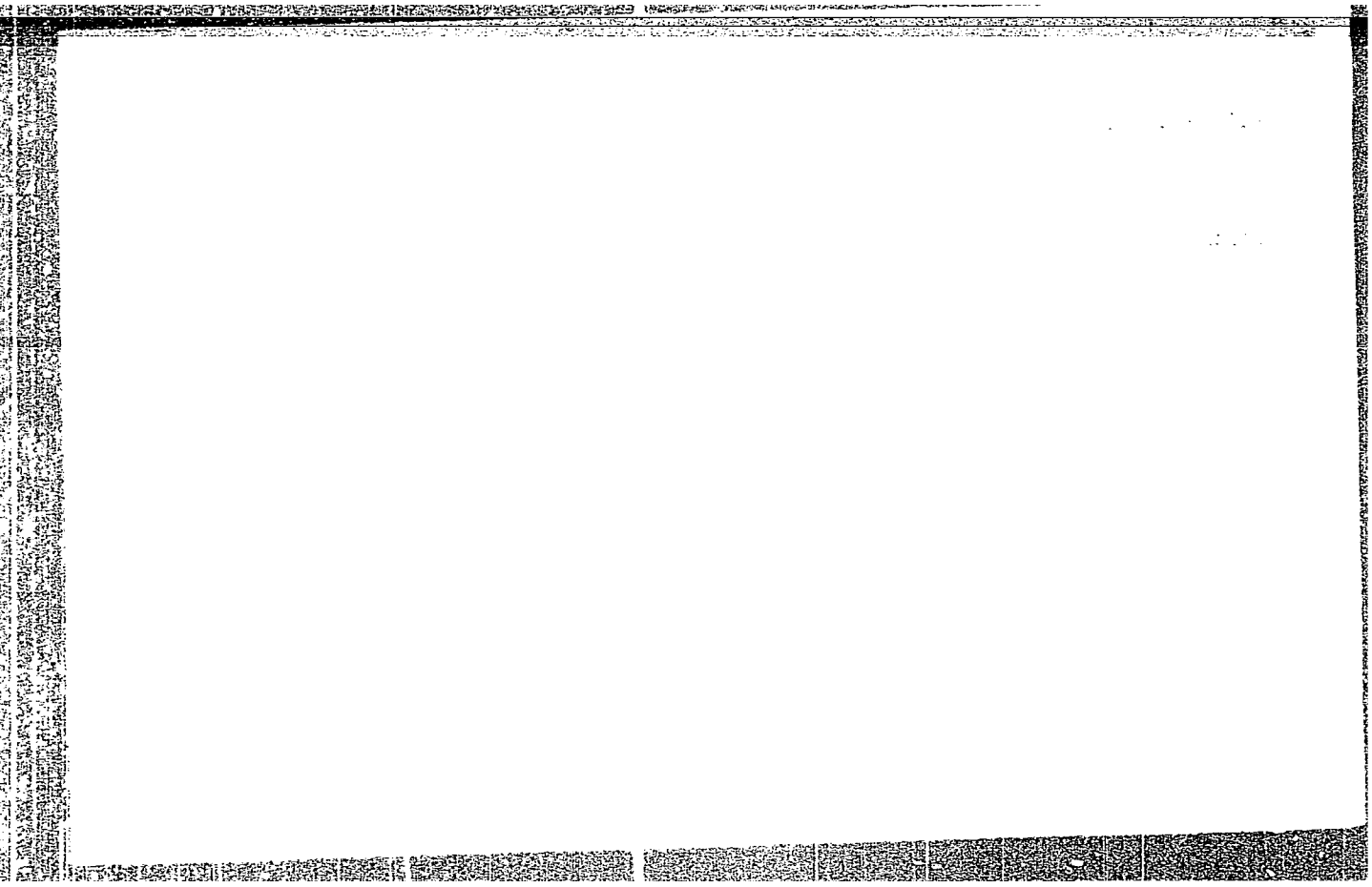

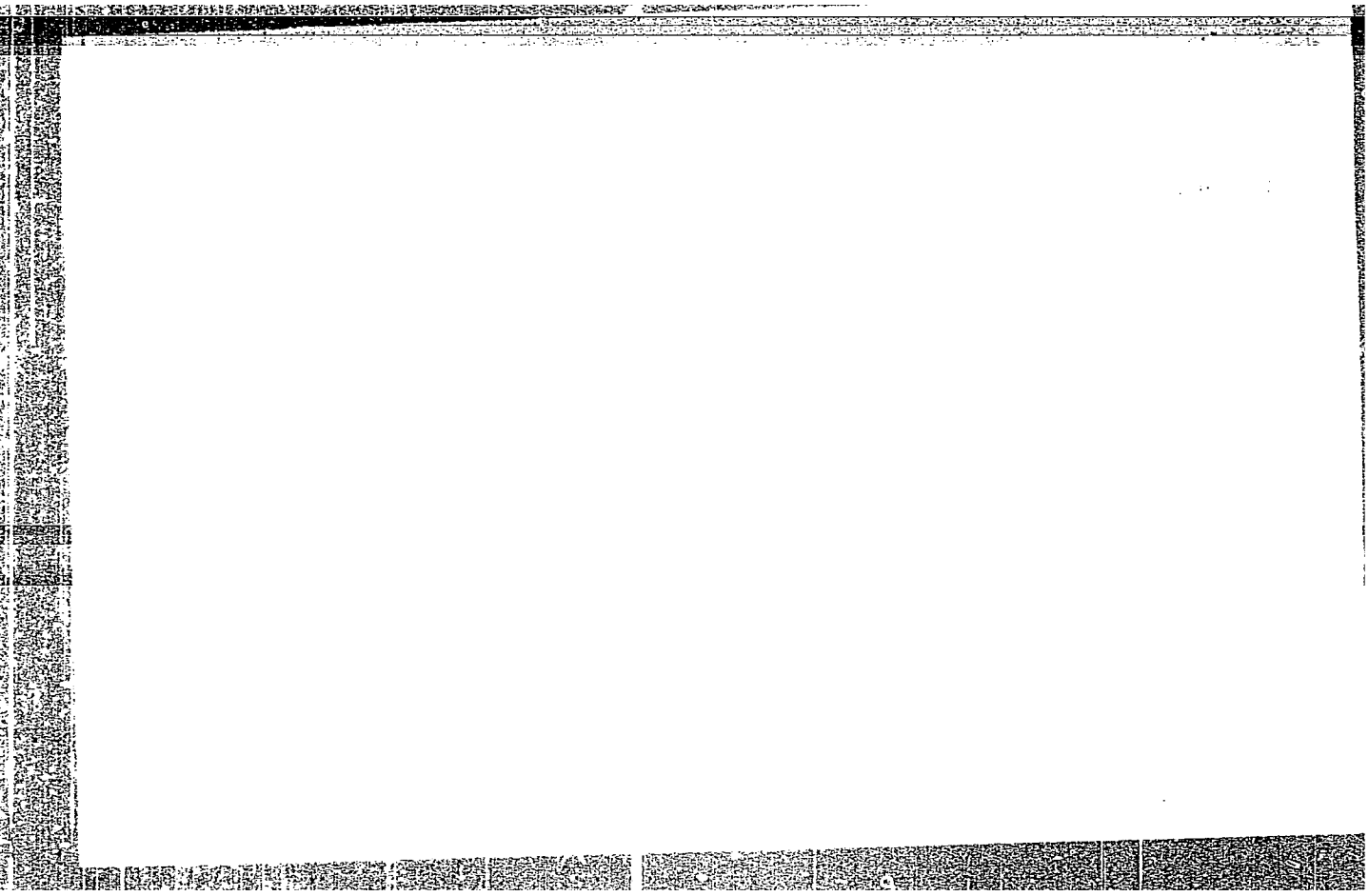

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(Steel--Corrosion)
(Electrolytic polishing)